

March 23, 2016
 * Exam #2 - Wednesday?
 2.5, 3.1, 5.1, 5.2, 5.4,
 5.5, 5.6

Mar 23-9:54 AM

5.5 Exponents
 $x^2 y^3 \cdot xy^2$
 Do we have same base? yes
 $\rightarrow xy$
 $x \cdot x \cdot y \cdot y \cdot y \cdot x \cdot y \cdot y$
 meaning
 $x^3 y^5$

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Law #1 Product Rule
 $x^m \cdot x^n = x^{m+n}$
 Must have same base
 $x^3 \cdot x^2 = x^{3+2} = x^5$

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Law #2 Power Rule
 $(x^m)^n = x^{m \cdot n}$
 $(x^2)^3 = x^2 \cdot x^2 \cdot x^2$
 $= x \cdot x \cdot x \cdot x \cdot x \cdot x$
 $= x^6$
 meaning
 Base

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Law #3 Quotient Rule
 $\frac{x^m}{x^n} = x^{m-n}$
 same base { $\frac{x^3}{x^2} = \frac{x \cdot x \cdot x}{x \cdot x \cdot 1} = 1 \cdot 1 \cdot x = x^1$
 $x^{3-2} = x^1 = x$

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$\frac{x^2}{x^3} = \frac{x \cdot x \cdot 1}{x \cdot x \cdot x} = \frac{1}{x}$
 $x^{2-3} = x^{-1} = \frac{1}{x}$

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Negative Exponents

#1 $\frac{x^{-m}}{1} = \frac{1}{x^m}$

$x^{-6} = \frac{1}{x^6}$

$5^{-3} = \frac{1}{5^3} = \frac{1}{125}$

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Negative Exponent

#2 $\frac{1}{x^{-m}} = \frac{x^m}{1} = x^m$

$\frac{1}{x^{-3}} \rightarrow \frac{1}{x^3} = \frac{\frac{1}{1}}{x^3} = \frac{1}{1} \cdot \frac{x^3}{1} = \frac{x^3}{1} = x^3$

~~$\frac{1}{x^{-3}} = \frac{x^3}{-1} = x^3$~~

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5.6 $(2x+3)^2 = (2x+3)(2x+3)$

$= 4x^2 + 6x + 6x + 9$

$= 4x^2 + 12x + 9$

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$x^3(x^5 - x^3)$

not like terms!

$x^3 \cdot x^5 - x^3 \cdot x^3$

$x^8 - x^6$

D: 8

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$-3x^2(2x-4) = -3x^2 \cdot 2x - (-3x^2) \cdot 4$

$= -6x^3 + 12x^2$

D: 3

$(2x^5 - 6x^2 + 10)(2x^3 - x + 8)$

~~$4x^8 - 2x^6 + 16x^5 - 12x^5 + 6x^3 - 48x^2 + 20x^3 - 10x + 80$~~

$4x^8 - 2x^6 + 4x^5 + 26x^3 - 48x^2 - 10x + 80$

D: 8

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$(3x+2)^4$

Do & Complete

5.1, 5.2, 5.4, 5.5, 5.6

look at

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